

selected dialed digit will appear in input field 320. The selected dialed digit may also appear at another predetermined region 420 on the display 214. The user repeats this dialing process with each desired digit. Once all digits have been dialed the device 210 will dial the telephone number represented by the selected digits.

[0045] Of course, the digits displayed in configuration 410A could be rearranged or dialing could be performed in a clockwise manner, as is illustrated in FIG. 4B. The virtual rotary dial pad configuration 410B in FIG. 4B illustrates how the digits may be reversed and dialing may also be reversed. FIG. 4B also illustrates the use of a circle 412B comprising finger holes 414 as described above. Other variations may be made as well.

[0046] FIG. 5 illustrates an additional virtual dial pad configuration 510. In configuration 510, dialing is effectuated by using a stylus 520 or a finger to "write" the digits to be dialed. Stylus 520 may be used with a resistive touch screen, and a finger with a capacitive touch screen. The touch screen display 214 on the device 210 includes a large writing area 515 in which a user may touch the display 214 and write a digit. In FIG. 5, the user is in the process of writing a "2" with the stylus 520. The dialing pad module 895 includes software that allows the device 210 to recognize letters written by a user. Optionally, dialing pad module 895 can learn how the user "writes" a particular digit. Once the device 210 recognizes the digit (for example, the 2 in FIG. 5) being drawn by the user, the determined digit is displayed in input field 320 on the display 214. Optionally, the recognized digit can be displayed in predetermined area 525. Incorrectly recognized digits can be deleted from input field 320 with delete key 316. In an alternative embodiment, the user can be given an opportunity to confirm that the device 210 has correctly displayed the written digit by waiting for the user to press the displayed digit before moving on to the next desired digit to be written. If the device displays a wrong digit, meaning that the device 210 failed to properly interpret the writing of the user, the user can simply rewrite the digit. Once all digits have been dialed the user can dial the telephone number represented by the selected digits by pressing the physical send button 218 of FIG. 1. Dialing pad module 895 is also adapted to recognize natural language digits, as well as so-called "unistroke" alphanumeric symbols (such as that described in U.S. Pat. No. 5,596,656).

[0047] The device 210 may also be programmable to associate different symbols drawn on the display 214 with various digits. As an example, the device 210 may interpret a vertical line made in a downward motion as a "1," and a vertical line made in an upward motion as a "2." Other symbols could represent digits 3-0.

[0048] Yet another virtual dial pad configuration 610 is illustrated in FIG. 6. In configuration 610, the user holds the portable electronic device 210 and waves the device in the air as if the user were using the device to write the digits of the telephone number. To "write" a first digit of the number, the user presses a key (either a virtual key on the touch screen display 214 or a customizable physical button 222) on the device 210 to indicate to the device 210 that it should begin recording the physical movement of the device 210. The user continues to press the key until the user has completed "writing" the digit. Physical movement is recorded using the accelerometer 890. In FIG. 6, the user is waving the device 210 so as to write a "2" in the air. The user indicates that he or she has completed writing a digit by releasing the pushed key. The

device 210 then displays on the touch screen display 214 the drawn number, as the device 210 interpreted it. In this way, the user can confirm that the device 210 correctly understood the user's actions and, if it did not, the user is able to redraw any incorrect digits. The configuration 610 clearly requires that the dial pad module 895 be in communication with the accelerometer 890. Also, although a touch screen display 214 has been used in the device 210 to aid in the description of configuration 610, a touch screen display is not necessary for the configuration 610 to function properly.

[0049] The device 210 may also be programmable to associate different symbols drawn in the air with various digits. As an example, the device 210 may interpret a vertical line made in a downward motion as a "1," and a vertical line made in an upward motion as a "2." Other symbols could represent digits 3-0. Alternatively, shaking the device 210 a single time could represent a "1;" shaking the device 210 twice could represent a "2;" and so forth.

[0050] Configurations 310, 410, 510, and 610 are each embedded in the dial pad module 895. Additional configurations are possible and may be added by third party applications or APIs.

[0051] Although the embodiments and applications as described above relate to a portable electronic device with data and voice communication capacity, it should be understood that they may also be embodied in and applied with any portable electronic device with an ability to dial telephone numbers.

[0052] Specific embodiments and applications related to the above description include, but are not limited to, a portable electronic device that includes a display, a communication system, and a first dial pad configuration selected from more than one dial pad configuration stored in a memory of the portable electronic device. The first dial pad configuration enables a user of the portable electronic device to dial and call a telephone number using the display and the communication system. The display can be a capacitive touch screen display, and the first dial pad configurations can include a rotary dial configuration and a writing zone configuration. The portable electronic device may also include an accelerometer, in which case the first dial pad configuration may also include a configuration that requires a user to wave the portable electronic device in the air as if to write a digit.

[0053] An additional embodiment includes a method of dialing a telephone number using a portable electronic device. The method includes selecting a first dial pad configuration for dialing telephone numbers using the portable electronic device. The first dial pad configuration is selected from more than one configuration embedded in a memory of the portable electronic device. In the case where the first dial pad configuration is a rotary dial pad configuration, a touch screen display is used. A touch screen display can also be used in the case where the first dial pad configuration is a writing zone and wherein a finger or a stylus is used to write the desired digits on the touch screen display. The display is optionally a capacitive touch screen display. An accelerometer is used when the first dial pad configuration requires the user of the portable electronic device to wave the device in the air as if to write the desired digits.

[0054] A system for using hardware of a portable electronic device to dial a telephone number is also described. The system includes a portable electronic device that includes a touch screen display, a processor, a memory and an accelerometer. The display is optionally a capacitive touch screen